Supreme Court, U.S.
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No. 01-714

IN THE

Supreme Court of the United States

STATE OF UTAH, *et al.*,

Appellants,

v.

DONALD L. EVANS, *et al.*,

Appellees.

On Appeal from the United States District Court for the District of Utah

BRIEF OF APPELLANTS

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QUESTIONS PRESENTED

1. Whether the court below erred in ruling that the Census Bureau may use the statistical method of "hot-deck imputation" to estimate unobserved segments of the population for purposes of congressional apportionment, despite this Court's ruling in *Department of Commerce* v. *United States House of Representatives*, 525 U.S. 316 (1999), that the Census Act prohibits the use of any statistical sampling in the apportionment count.

2. Whether the court below erred in ruling that the Census Bureau may, consistent with the constitutional requirement that congressional representation be apportioned pursuant to an "actual Enumeration" of each State's population, use the statistical method of hot-deck imputation to estimate unobserved segments of the population.

PARTIES TO THE PROCEEDING

The appellants herein, who were plaintiffs before the three-judge district court, are the State of Utah; Michael O. Leavitt, Governor; Olene S. Walker, Lieutenant Governor; Mark L. Shurtleff, Attorney General; L. Alma Mansell, President, Utah Senate; Martin R. Stephens, Speaker, Utah House of Representatives; Mike Dmitrich, Minority Leader, Utah Senate; Ralph Becker, Minority Leader, Utah House of Representatives; U.S. Senators Orrin G. Hatch and Robert F. Bennett; U.S. Representatives James V. Hansen, Christopher B. Cannon, and James Matheson; and Utah residents Blake J. Russon, Michael Wayne Anderson, Brent McGhie, and Jean McGhie.

The appellees in this Court, who were the principal defendants below, are Donald L. Evans, Secretary of the United States Department of Commerce; and William G. Barron, Acting Director of the United States Census Bureau.

Additional appellees, who appeared as defendant-intervenors below, include the State of North Carolina; Michael F. Easley, Governor; Beverly Perdue, Lieutenant Governor; Roy Cooper, Attorney General; Marc Basnight, President Pro Tempore, North Carolina Senate; James Black, Speaker, North Carolina House of Representatives; Patrick Ballentine, Minority Leader, North Carolina Senate; Leo Daughtry, Minority Leader, North Carolina House of Representatives; U.S. Senators Jesse Helms and John Edwards; and U.S. Representatives Eva M. Clayton, Bob Etheridge, Walter B. Jones, David Price, Richard Burr, J. Howard Coble, Mike McIntyre, Robin Hayes, Sue Myrick, T. Cass Ballenger, Charles H. Taylor, and Melvin L. Watt.

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OPINION BELOW

The opinion of the three-judge district court, *Utah* v. *Evans*, No. 2:01-CV-292G (D. Utah Nov. 1, 2001), is unpublished, and is reproduced in the appendices to the Jurisdictional Statement ("JS App.") at 1a-34a.

JURISDICTION

The judgment of the three-judge district court was entered on November 5, 2001. Appellants filed a timely Notice of Appeal on November 5, 2001, and a timely Jurisdictional Statement on November 20, 2001. On January 22, 2002, this Court entered an order postponing further consideration of the question of jurisdiction to the hearing of the case on the merits. The jurisdiction of this Court is invoked under 28 U.S.C. §§ 1253, 2101(b), and under the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 1998, Pub. L. No. 105-119, § 209(e)(1), 111 Stat. 2440, 2482.

Pursuant to Rule 18.12, appellants submit that this Court has jurisdiction over this appeal, and that the only questions that have been raised with regard to jurisdiction are insubstantial. Before the district court, appellee North Carolina argued that challenges to "apportionment tallies flowing from the 2000 census" are not justiciable because "the President has already transmitted to Congress the statement required by 2 U.S.C. § 2a(a) and the Clerk of the House of Representatives has already sent to the states a certificate of the number of Representatives to which each state is entitled as required by 2 U.S.C. § 2a(b)." JS App. 9a-10a. North Carolina raised the same argument before this Court in its Motion to Dismiss or Affirm, see NC Mot. 12, although the Solicitor General has raised no such argument. After a full analysis of the issue, the district court correctly rejected North Carolina's argument, concluding that this Court's decision in *Franklin* v. *Massachusetts*, 505 U.S. 788

(1992), "establishes that Plaintiffs' Census Act and constitutional claims are justiciable." JS App. 10a.

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

1. Article I, Section 2, Clause 3 of the United States Constitution is reproduced at JS App. 37a.

2. Sections 1 and 2 of Amendment XIV of the United States Constitution are reproduced at JS App. 37a-38a.

3. Sections 141(a) and 195 of Title 13, United States Code, are reproduced at JS App. 39a.

STATEMENT OF THE CASE

In the 2000 census, the Secretary of Commerce and the Director of the Census Bureau (collectively "the Bureau") used a statistical sampling technique known as "hot-deck imputation" to estimate certain segments of the population for purposes of congressional apportionment. That method, which deprived Utah of a fourth seat in the House of Representatives, is unlawful under the Census Act's prohibition on "statistical sampling," as authoritatively construed by this Court in *Department of Commerce* v. *United States House of Representatives*, 525 U.S. 316, 343 (1999), and under the Constitution's Census Clause.

1. **Historical Background on Sampling.** The decennial census is conducted pursuant to Article I, Section 2, Clause 3 of the United States Constitution. As modified by the Fourteenth Amendment, this "Census Clause" requires Congress to conduct an "actual Enumeration" of "the whole number of persons in each State" every ten years, and to use that enumeration as the basis for apportioning seats in the House of Representatives. U.S. Const. art. I, § 2, cl. 3; *id.* amend. XIV, § 2. Through the Census Act, 13 U.S.C. § 1 *et seq.*, Congress has delegated responsibility for conducting the census to the Secretary of Commerce, who is directed to

conduct "a decennial census" of the "population" of each State. 13 U.S.C. § 141(a).

As this Court explained in *House of Representatives*, "[f]rom the very first census, the census of 1790, Congress has prohibited the use of statistical sampling in calculating the population for purposes of apportionment." 525 U.S. at 335. For example, "[t]he First Congress enacted legislation requiring census enumerators to swear an oath to make 'a just and perfect enumeration' of *every person* within the division to which they were assigned." *Id.* (emphasis added). Moreover, "[e]ach enumerator was required to compile a schedule of information for his district, listing by family name the number of persons in each family that fell into each of five specified categories." *Id.*

In 1810, Congress revised that legislation, and required "that 'the said enumeration shall be made by an actual inquiry at every dwelling-house, or of the head of every family within each district, and not otherwise,' and expanding the number of specifications in the schedule of information." *Id.* The requirement "that census enumerators visit each home in person" was a component of all of the "statutes governing the next 14 censuses." *Id.*

The current Census Act, enacted in 1954, initially "requir[ed] enumerators to 'visit personally each dwelling house in his subdivision' in order to obtain 'every item of information and all particulars required for any census or survey' conducted in connection with the census." *Id.* at 336. In fact, "the first departure from the requirement that the enumerators collect all census information through personal visits to every household in the Nation came in 1957 at the behest of the Secretary" of Commerce. *Id.* In that year, the Secretary "asked Congress to amend the Act to permit the Bureau to use statistical sampling in gathering some of the . . . information" collected in the census for purposes unrelated to congressional apportionment. *Id.*

Responding to that request, Congress enacted § 195, which initially provided that, "'[e]xcept for the determination of population for apportionment purposes, the Secretary may, where he deems it appropriate, authorize the use of the statistical method known as "sampling" in carrying out the provisions of this title.'" *Id.* (alteration in original) (quoting 13 U.S.C. § 195 (1970)). That provision gave the Secretary discretion "to authorize the use of sampling procedures in gathering supplemental, *nonapportionment* census information regarding population, unemployment, housing, and other matters collected in conjunction with the decennial census—much of which is now collected through what is known as the 'long form.'" *Id.* at 336-37 (emphasis added). Section 195 did not, however, "authorize the use of sampling procedures in connection with apportionment of Representatives." *Id.* at 337.

A House Report issued at the time of § 195's enactment in 1957 confirms that the language referring to the apportionment count prohibits the Bureau from using anything "less than a complete enumeration" in conducting that portion of the census. H.R. Rep. No. 85-1043, at 10 (1957) (quoted in Administrative Record ("AR") at C01219, *Utah* v. *Evans*, No. 2:01-CV-292G (D. Utah filed July 11, 2001)). That report also pointed out that a requirement of a "complete enumeration" is necessarily "implied by the word 'census,'" and thereby suggested that—even prior to the enactment of § 195—an apportionment count based on "anything less than a complete enumeration" would have been unlawful. *Id.* Citing that report, the Bureau later suggested that § 195's prohibitive language was not new, but rather the statutory embodiment of what it described as the "'historical precedent of using the "actual Enumeration" for purposes of apportionment.'" 525 U.S. at 340 (quoting 45 Fed. Reg. 69,366, 69,732 (Oct. 20, 1980)).

Another significant change occurred in 1964, when "Congress repealed former § 25(c) of the Census Act, which

had required that each enumerator obtain 'every item of information' by personal visit to each household." *Id.* at 337 (citation omitted). The repeal of that requirement authorized the Bureau "to replace the personal visit of the enumerator with a form delivered and returned via the Postal Service." *Id.* Thereafter, households that "failed to return census forms" through the mail were enumerated through "follow up" visits conducted by census enumerators. *Id.* Thus, although the new legislation authorized the Bureau "to conduct a portion of the census through the mail, there was no suggestion from any quarter that this change altered the prohibition in § 195 on the use of statistical sampling in determining the population for apportionment purposes." *Id.*

In 1976, Congress amended § 195 to its current form, which provides that, "[e]xcept for the determination of population for purposes of apportionment of Representatives in Congress among the several States, the Secretary shall, if he considers it feasible, authorize the use of the statistical method known as 'sampling' in carrying out the provisions of this title." 13 U.S.C. § 195. As this Court established in *House of Representatives*, the section "maintains its prohibition on the use of statistical sampling in calculating population for purposes of apportionment." 525 U.S. at 339.

2. **The Statistical Procedure At Issue In *House of Representatives* Decision.** In 1997, the Bureau identified what it described as "the problem of 'undercount' in the decennial census":

> For the last few decades, the Bureau has sent census forms to every household, which it asked residents to complete and return. The Bureau followed up on the mailing by sending enumerators to personally visit all households that did not respond by mail. Despite this comprehensive effort to reach every household, the Bureau has always failed to reach—and has thus failed to count—a portion of the population.

Id. at 322. The Bureau's response to that problem was to propose the use of random sampling to estimate the number of individuals who could not be counted through traditional enumeration procedures. Under that procedure, which was later addressed in *House of Representatives*, the Bureau planned to limit its follow-up efforts for non-responding households to a randomly selected subset of all non-responding units in each neighborhood or "census tract." See *id.* at 324. The Bureau planned to use information gathered from the randomly sampled units in each tract to "estimate the [occupancy] characteristics [of each] of the remaining" non-responding units in the same tract for which it had no information. *Id.* at 325. As the Court noted, this procedure was designed in part to address the fact that "[s]ome identifiable groups—including certain minorities, children, and renters—have historically had substantially higher undercount rates than the population as a whole." *Id.* at 322-23.

While the Bureau had not yet settled on a precise methodology for creating these estimates when this Court issued its ruling in *House of Representatives*, the Administrative Record compiled by the appellees in this case indicates that the Bureau would have assumed that each unenumerated unit had the same occupancy characteristics as its geographically closest sampled neighbor or "donor." See Robert E. Fay, *Theory and Application of Nearest Neighbor Imputation in Census 2000*, 1999 Proc. for the Sec. on Surv. Res. Methods, Am. Stat. Ass'n 112, 113-14, 116 (AR at C01647-C01656). The Bureau planned to estimate roughly 10% of the population using this technique. JA 49.

This Court invalidated that procedure. It held, without qualification, that § 195 prohibits the use of all statistical "sampling" in the apportionment count. 525 U.S. at 340. Thus, because the Bureau's procedure was a form of "sampling," the Court held that it violated § 195.

3. **The Statistical Procedure at Issue Here.** Having failed in its effort to deal with the undercount through random

sampling, the Bureau fell back on another approach, known as "hot-deck imputation." Unlike the random sampling method invalidated in *House of Representatives*, however, it is undisputed that hot-deck imputation was *not* designed to address the differential undercounting of traditionally underrepresented demographic groups. JA 52 n.8.

Prior to employing this methodology in the 2000 Census, the Bureau conducted various "non-response follow-up" procedures in an attempt to visit every address on its "Master Address File"[1] for which the Bureau did not receive a completed census questionnaire by mail. Specifically, census enumerators were directed to make up to six visits to each such address (either by telephone or through a personal visit) to complete missing census questionnaires. Enumerators were also instructed to attempt to identify any addresses that represented vacant housing units, or that did not identify existing housing units at all, but instead represented vacant property, demolished buildings, business establishments, or other non-residential structures. *Id.* at 42. At the conclusion of the non-response follow-up process, non-responding units that the Bureau had neither fully enumerated nor declared vacant or non-existent were assigned an "unknown" status.

The Bureau then used "hot-deck imputation" to estimate the occupancy characteristics of all such units. Specifically, as it intended to do in connection with the random sampling procedure invalidated in *House of Representatives*, the Bureau assumed that each estimated unit had the same occupancy characteristics as a nearby sample or "donor" unit. The unit selected as the donor was the estimated unit's geographically closest neighbor of the same type (*i.e.*, apartment or single-family dwelling) that did not return a

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[1] The "Master Address File" is a comprehensive list of all known or potential housing units within the United States, which is created with the assistance of the United States Postal Service, other federal agencies, tribal, state, and local governments, and community organizations. *See* JA 40-41.

census questionnaire but was enumerated during the non-response follow-up process. See JA 43, 50-51.

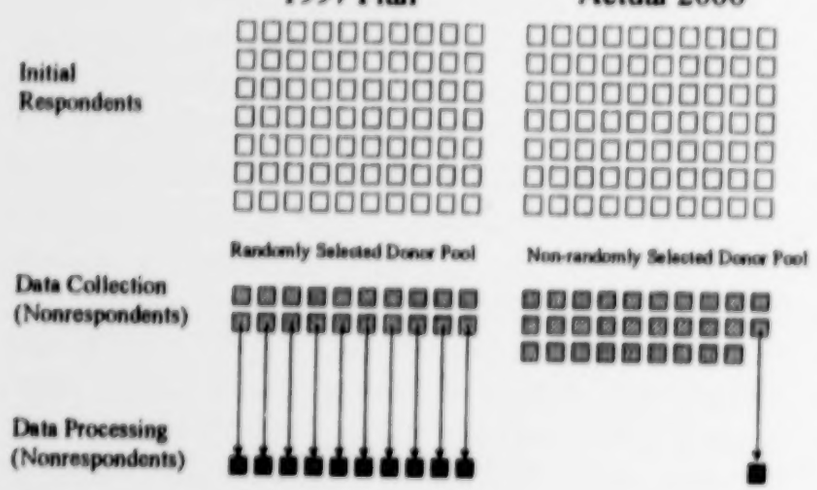
The Bureau used imputation in three distinct contexts in the 2000 census: (a) "household size imputation," in which enumerators determined that a particular unit was occupied, but could not ascertain a specific count; (b) "occupancy imputation," in which enumerators were unable to determine whether the unit was even occupied; and (c) "status imputation," in which enumerators were unable to determine whether an address on the Master Address File even represented an existing housing unit. Federal Defs.' Mem. in Opposition to Summ. J. ("DOJ Mem.") at 22 ¶ 12, *Utah* v. *Evans*, No. 2:01-CV-292G (D. Utah filed July 11, 2001). In all three contexts, the Bureau used the same statistical procedure to assume into existence theoretical or "phantom" persons, and then to add them to the apportionment count.

While the assumption that such individuals exist is speculative as to all three categories, it is particularly so with regard to status imputation. Indeed, the Bureau's only basis for concluding that status-imputed housing units exist at all is the presence of an address on the Master Address File, which concededly contains a large number of addresses that do not represent housing units. While it is supposed to consist entirely of residential addresses, the Master Address File is known to contain addresses for businesses, storage units, and other erroneously included information. See AR at C01585.

Although household size imputation and occupancy imputation have been used in the apportionment count since 1960 (and have affected apportionment only once, in 1980), status imputation made its debut in the 2000 census. See JA 40-45 & n.4. Thus, although the Bureau had estimated phantom persons deemed to reside in housing units that were known to exist (and in some instances, were known to be occupied) prior to the 2000 census, it had not previously purported to estimate phantom residents of phantom housing units. *Id.* at 46.

These phantoms collectively comprised 0.4% of the apportionment count in the 2000 census, which was more than enough to affect the allocation of Representatives. Critical to this case, it is undisputed that if the Bureau had not used imputation—or even if it had not expanded its use of the procedure to include status imputation—Utah would have been entitled to a fourth Representative. *Id.* at 55-56.

4. **Comparison of the Two Procedures**. Although the Bureau used hot-deck imputation to estimate a smaller portion of the overall population than it planned to estimate using the random sampling procedure invalidated in *House of Representatives*, the two procedures are similar in principle and practical effect. The similarities between the two procedures are illustrated by the following diagram:



The left column represents the procedure invalidated in *House of Representatives*. The right column represents the hot-deck imputation procedure used in the 2000 census. Both columns contain a total of 100 boxes, each of which represents one housing unit in a hypothetical census tract consisting of 100 units. The 70 white boxes in each column

represent units whose occupants completed census questionnaires and returned them to the Bureau through the mail. (In a typical tract, roughly 70% of the population is expected to respond by mail, see 525 U.S. at 324.) The shaded boxes represent units enumerated by the Bureau during the non-response follow-up process, or what might be described as the "data collection" stage of each procedure. The black boxes represent units whose occupants were (or would have been) estimated during the "data processing" stage of each procedure.

The 20 shaded boxes in the left column represent those units in this hypothetical tract that the Bureau would have selected randomly for inclusion in the non-response follow-up process. The Bureau then would have visited and enumerated each of those units, which would have collectively comprised the "donor pool," or set of units from which the Bureau selected individual "samples" to estimate the remaining unenumerated units. Specifically, the Bureau would have assumed that each of the unenumerated units, depicted by the ten black boxes, had the same occupancy characteristics as its geographically closest neighbor or "donor" that was randomly selected for inclusion in the non-response follow-up process. See *supra* at 6. Stated differently, in each instance, the Bureau would have imputed to the unobserved household the occupancy characteristics of the donor or "sample" household, represented in the diagram by a line running from the donor household to the estimated household. The estimates produced by this method would have comprised roughly 10% of the apportionment count. 525 U.S. at 324.

The 29 shaded boxes in the right column represent the housing units in the hypothetical tract that were actually enumerated during the Bureau's non-response follow-up process in the 2000 census. Again, the units enumerated during the non-response follow-up process collectively comprised the "donor pool," or set of units from which the Bureau selected individual "samples" to estimate

unenumerated units. The black box represents a single non-responding unit in the hypothetical tract whose existence and/or occupancy characteristics the Bureau failed to establish during the non-response follow-up process. Using hot-deck imputation, the Bureau assumed that each such unit had the same occupancy characteristics as a nearby donor or "sample"—the estimated unit's geographically closest neighbor whose occupants were enumerated during the non-response follow-up process. Estimates produced by that process amounted to roughly 0.4% of the apportionment count (rounded up to one in the example).

As the diagram demonstrates, the imputation procedure used in the 2000 census differed from the sampling proposal at issue in *House of Representatives* in two respects. First, imputation was used to produce estimates on a smaller scale and only with respect to units that the Bureau, after six visits, was not able to enumerate. Second, the units in the donor pool were not randomly selected; instead, under hot-deck imputation, potential donors were chosen because they were successfully enumerated during non-response follow-up.

5. **The Decision And Opinions Below.** Utah's complaint alleged that hot-deck imputation deprived Utah of a fourth Representative and that it is unlawful under the Census Act and Census Clause. Utah sought declaratory and injunctive relief directing the Bureau to remove all imputation-derived estimates from the apportionment count, and to submit a corrected apportionment tabulation to the President. The State of North Carolina and several of its officers and representatives intervened as defendants soon after the case was filed. All parties moved for summary judgment.

Utah advanced two principal claims. First, Utah showed that, like the procedure invalidated by this Court in *House of Representatives*, imputation is a statistical tool used to estimate unobserved segments of the population by reference to observed segments or "samples" of the population. Thus, Utah asserted that imputation is a form of "sampling" that is

invalid under § 195 of the Census Act. Second, Utah showed that hot-deck imputation is incompatible with the constitutional prescription of an "actual enumeration" of each State's population, which contemplates an actual count and not an estimate of phantom numbers.

The three-judge district court issued a divided opinion granting summary judgment for defendants and dismissing Utah's claims. As to Utah's statutory claim, the majority reasoned that "statistical sampling and imputation are separate statistical methodologies." JS App. 18a. In reaching that conclusion, the majority relied almost entirely on the reasoning employed in *Orr* v. *Baldrige*, No. IP-81-604-C, slip op. at 5-7 (S.D. Ind. July 1, 1985), despite the fact that the parties to that litigation had inexplicably stipulated to the validity of the procedure under § 195, and therefore had neither briefed nor argued that issue. JS App. 18a-20a.

The majority below apparently defined the term "sampling" as "the technique of determining the traits of the entire population by collecting and analyzing data" from a *randomly* drawn, representative sample of that population. JS App. 20a. It did so by defining the word "sample" as a "'subset of units from a larger population'" selected in such a way that "'each unit of th[at] population has a known chance of selection.'" *Id.* at 19a (quoting *Orr*). Citing no authority, and offering no explanation for its analysis, it also concluded that "sampling is a statistical methodology utilized at the data collection stage" of statistical sampling, "while imputation is a distinct statistical methodology utilized at the data processing stage." *Id.* at 21a. Thus, the district court suggested that § 195's prohibitive scope extends only to what might be called "premeditated" sampling, *i.e.*, sampling procedures in which "only . . . pre-identified persons or housing units are contacted for the purpose of data collection." *Id.* Because hot-deck imputation was a form of non-random sampling and (in the district court's view) was conducted at the "data processing" stage of the analysis, the district court concluded that the

Bureau's use of hot-deck imputation in the 2000 census survived under § 195. *Id.*

The majority also rejected Utah's claims under the Census Clause. Dismissing Utah's constitutional claim as an "effort to ascribe some exalted meaning to 'actual enumeration,'" JS App. 25a, the district court concluded that the "constitutional requirement of an enumerative census was simply to distinguish that process from the conjectural apportionment of the first Congress." *Id.* at 26a. Judge Greene dissented. He concluded that the Bureau's use of hot-deck imputation, in both substance and effect, constitutes sampling under § 195, as interpreted by this Court in *House of Representatives*. See *id.* at 28a-34a. He noted that the Bureau has previously defined sampling as occurring "'whenever the information on a portion of the population is used to infer information on the population as a whole.'" *Id.* at 30a. He also found imputation to be "indistinguishable" from the type of sampling at issue in *House of Representatives* "because both use a portion of the population to infer information concerning segments of the population in order to arrive at final figures concerning the population as a whole." *Id.* at 33a.

SUMMARY OF ARGUMENT

Throughout most of our nation's history, the fundamental distinction between a statistical estimate and the "actual enumeration" required by the Census Clause and implemented in the Census Act has been a point of universal agreement. The Framers understood the difference between an actual enumeration and a mere estimate of population, and even acknowledged that the former would result in an undercount. Yet, in both the Constitution and the first Census Act, the Framers expressly rejected any enumeration based in whole or in part on estimates—requiring an "actual enumeration" through individual visits by census enumerators. They did so, not out of naivete, but to maintain

an objective standard for apportionment and to minimize the risk of political manipulation.

As this Court recognized in *House of Representatives*, subsequent versions of the Census Act have followed this same approach. "From the very first census, the census of 1790, Congress has prohibited the use of statistical sampling in calculating the population for purposes of apportionment." 525 U.S. at 335. Initially, this prohibition was implicit in the method of enumeration prescribed by Congress: Congress consistently "requir[ed] enumerators to 'visit personally each dwelling house in his subdivision' in order to obtain 'every item of information and all particulars required for any census or survey' conducted in connection with the census." *Id.* at 336.

Section 195 was Congress's "first departure from the requirement that the enumerators collect all census information through personal visits to every household." *Id.* When first enacted in 1957, this section provided that "[e]xcept for the determination of population for apportionment purposes, the Secretary may, where he deems it appropriate, authorize the use of the statistical method known as 'sampling.'" 13 U.S.C. § 195 (1970). In 1976, Congress amended § 195 by "changing the phrase 'may, where he deems it appropriate' to 'shall, if he considers it feasible.'" 525 U.S. at 338-39.

The Bureau sought refuge under this amended provision in its 1997 proposal to enumerate only 90% of the population and to estimate the remainder using random sampling. In *House of Representatives*, this Court held this proposal invalid under the Census Act. Although the Court recognized that the statute was somewhat ambiguous, the Court held that the ambiguity was resolved by the historical context of the Census Act—that in light of the longstanding requirement of personal visits by census enumerators, Congress could not be assumed to have intended to permit the use of sampling in the apportionment count. *Id.* at 340. Thus, this Court held that "the section maintains its prohibition on the use of statistical

sampling in calculating population for purposes of apportionment." *Id.* at 339.

In light of this background, and in light of the plain language of both the Census Act and the Census Clause, the Bureau's method of hot-deck imputation cannot withstand scrutiny under the statute or under the Constitution.

I. First, imputation is as much a method of "sampling" prohibited by § 195 as the procedure struck down in *House of Representatives*. Prior to this litigation, the Bureau expressly acknowledged that "sampling" is generally understood to include any statistical procedure in which "information on a portion of a population is used to infer information on the population as a whole." Bureau of the Census, *Report to Congress: The Plan for Census 2000*, at 23 (Aug. 1997) ("*Census 2000 Report*") (AR at C00155). Moreover, that common-sense understanding of the statutory term finds consistent support in contemporaneous statistical texts and other publications.

Imputation is unquestionably a form of "sampling" under this definition. It is undisputed that imputation is a statistical procedure in which "information on a portion of" a State's population—namely, the so-called "donor" household—is used to infer information about unobserved segments of the "population" and, hence, about the population as a whole.

The district court's attempts to avoid this conclusion were based on a hair-splitting analysis that cannot withstand scrutiny. These included the suggestion that § 195's prohibition extends only to "random" sampling, and that it prohibits only sampling that is built into the Bureau's "data collection" efforts and is in that sense premeditated.

Both of these limitations are flatly contrary to the statutory language, and in any event are foreclosed by the historical context discussed by this Court in *House of Representatives*. At the time § 195 was enacted, Congress had long foreclosed the use of "'estimates based on sampling or other statistical

procedures, no matter how sophisticated,'" 525 U.S. at 340. Congress did not attempt to draw any such fine distinctions between forbidden and authorized forms of "sampling" in this context.

Moreover, because imputation is substantively indistinguishable from the sampling procedure invalidated in *House of Representatives*, acceptance of either of these limitations would nullify the statutory prohibition and easily permit the Bureau to evade the holding in that case. Congress simply did not intend a statutory prohibition that could be so easily evaded, particularly on the grounds offered by the majority below.

Finally, the Bureau's methods of "occupancy imputation" and "status imputation" are unlawful even under the standards adopted by the district court below and by the dissenting opinions in *House of Representatives*. Although the district court insisted that it could not invalidate the Bureau's use of hot-deck imputation because that would "[f]orc[e] [the Bureau] to ignore" what it described as "valid residences," JS App. 25a, that standard would justify only household size imputation. And it would condemn occupancy and status imputation inasmuch as addresses subjected to those methods are not known to represent occupied units.

Occupancy and status imputation are similarly unlawful under the reasoning offered by Justices Breyer and Stevens in their respective dissenting opinions in *House of Representatives*. These methods cannot plausibly be considered means of "fill[ing] gaps in the headcount" because no one even knows if the addresses at issue correspond to housing units or, if so, whether those units are occupied. By the same token, the Bureau's use of occupancy and status imputation cannot be defended on the basis that those procedures make the census more accurate.

II. Even if there were any ambiguity as to the scope of the statute, that ambiguity should be resolved in a way that would

avoid the serious constitutional problems presented by the Bureau's method of imputation. The Census Clause's prescription of an "actual enumeration" prohibits any and all methodologies that rely upon an estimate of a portion of the population, rather than an actual count. The correctness of that conclusion is amply demonstrated, not only by the textual and historical evidence before the Court in *House of Representatives*, but by a wealth of additional evidence from the Founding period. That evidence—most of which was not before the Court in *House of Representatives*—confirms not only that the founding-era dictionary meaning of an "actual enumeration" contemplates an actual count and not an estimate, but also that the constitutional language was a well-worn term of art used consistently during this period to make this very distinction.

The district court avoided the plain language of the Census Clause by insisting that the Framers aspired only for accuracy and did not intend to prescribe a census methodology. The historical record, however, proves otherwise. Delegates to the Constitutional Convention expressly intended to adopt a "rule" that was "fixt" and "permanent and precise," and they understood the prescription of an actual enumeration to do just that. James Madison, for example, recognized that there was "difficulty" and "trouble" in conducting an actual enumeration, but nonetheless concluded that this was "the way required by the Constitution." Washington and Jefferson expressed the same understanding. Although they indicated an ability and an incentive to supplement the enumeration returns with estimates, they acknowledged that they were bound by the official census returns. In sum, "actual enumeration" was not merely a euphemism for "accuracy," it was a command to follow a "fixt" process to achieve a specific count.

Thus, if the original understanding of the Census Clause is to be preserved, the Bureau's hot-deck imputation procedure,

which is unquestionably a method of estimation rather than enumeration, must be invalidated.

ARGUMENT

I. THE CENSUS ACT'S PROHIBITION OF "SAMPLING" ENCOMPASSES NON-RANDOM, NON-PREMEDITATED SAMPLING METHODS LIKE IMPUTATION.

As in *House of Representatives*, the issue of statutory interpretation in this case turns on the meaning of § 195 of the Census Act. Here, the question is whether hot-deck imputation is a form of the "statistical procedure known as 'sampling'" prohibited by that section. The Bureau concedes that the challenged method is a "statistical procedure," but contends that it is not a form of "sampling." As shown below, however, no reasonable construction of the statutory language can support the Bureau's use of hot-deck imputation in the 2000 census. Moreover, even if the statute could be tortured to condone the Bureau's use of "household size" imputation, it could not justify the use of "status" and "occupancy" imputation, which focus on addresses and dwelling units not even known to exist or to be occupied, much less known to house a certain number of real people.

A. All Forms Of Hot-Deck Imputation Violate The Census Act.

As the Bureau itself expressly acknowledged prior to this litigation, the term "sampling" is generally understood to include any statistical procedure in which "information on a portion of a population is used to infer information on the population as a whole." *Census 2000 Report* at 23 (AR at C00155); *accord* Maurice G. Kendall & William R. Buckland, *A Dictionary of Statistical Terms* 254 (1957) (defining a "sample" as "[a] part of a population, or a subset from a set of units, which is provided by some process or other, usually by deliberate selection with the object of investigating the properties of the parent population or set").

Moreover, as this Court held in *House of Representatives*, § 195 prohibits, without qualification or exception, "the use of sampling in calculating the population for purposes of apportionment." 525 U.S. at 340.

Given this clear-cut definition and this Court's prior holding, it is difficult to understand how the Bureau or the court below could conclude that hot-deck imputation survives under § 195. After all, it is undisputed that imputation is a statistical procedure in which "information on a portion of" a State's population—namely, the so-called "donor" household—is used to infer information about unobserved segments of the "population" and that leads to a conclusion about the population as a whole.

Nevertheless, the district court, at the Bureau's urging, sought to escape this obvious outcome by adopting narrow limitations on the statutory term "sampling." Specifically, the court attempted to limit that term—and hence this Court's holding in *House of Representatives*—to what is known in the field as "random sampling," *i.e.*, statistical techniques that involve the "'selection of a subset of units from a larger population in such a way that each unit of the population has a known chance of selection.'" JS App. 19a. Alternatively, the district court, like the Bureau in its Motion to Affirm, attempted to limit the statutory term to what might be called "premeditated" sampling, *i.e.*, procedures in which "[o]nly . . . pre-identified persons or housing units are contacted for the purpose of data collection." *Id.* at 21a.

Neither of these proposed limitations on the statutory term withstands analysis. As demonstrated below, both are flatly contrary to the statutory language, as reflected in contemporaneous definitions embraced in the Bureau's own documents and in statistics dictionaries and texts, and confirmed by the historical context discussed by this Court in *House of Representatives*. Moreover, because imputation is in principle and practical effect no different from the sampling procedure invalidated in *House of Representatives*,

acceptance of either of these limitations would nullify the statutory prohibition and easily permit the Bureau to evade the holding in that case.

1. In its 1997 report to Congress outlining its failed plan to use random sampling in the 2000 census, the Bureau explained that "'sampling' occurs whenever the information on a portion of a population," that is, a "sample," is "used to infer information on the population as a whole." *Census 2000 Report* at 23 (AR at C00155). The Bureau further explained that "a 'sample' is taken whenever the whole is represented by less than the whole." *Id.* Thus, under the Bureau's own definitions, the term "sampling" refers to the two-step process of (1) using "'information on a portion of a population'" or "sample" to (2) "'infer information' about unobserved portions of the same population," JA 48 (quoting *Census 2000 Report* at 23 (AR at C00155)), thereby enabling the observer to make conclusions about "the population as a whole." *Census 2000 Report* at 23 (AR at C00155).[2]

[2] This same common-sense definition was embraced by the Bureau (albeit inconsistently) in the proceedings below. Utah filed a Statement of Undisputed Facts with the district court that noted the parties' agreement on this definition. JA 47-48. The Bureau's initial submissions, while purporting to reject Utah's definition, made that agreement clear. DOJ Mem. 38 n.18 ("'A sampling method is a method of selecting a fraction of the population in a way that the selected sample represents the population.'") (quoting Pandurang V. Sukhatme, *Sampling Theory of Surveys With Applications* 9 (1954)); *see also* DOJ Mem. 37 ("'A sample may, in the vernacular, refer to any subset of units provided by any arbitrary process.'") (quoting AR at C01167-68). Although the Bureau eventually sought to modify its conception of sampling when it became clear that the agreed-upon definition encompassed imputation, *see* Defs.' Reply Mem. in Support of Their Mot. to Dismiss at 10-11 ¶¶ 24, 26, *Utah v. Evans*, No. 2:01-CV-292G (D. Utah filed Aug. 14, 2001), its initial concession to the common-sense definition set forth above is telling.

Moreover, the Bureau's inconsistent interpretations of the statutory term, both in this case and previously, preclude any claim for deference to its construction of the statute. *See* 525 U.S. at 340-41.

Moreover, the common-sense definition embraced by the Bureau is consistent with the usage of the term in countless statistical dictionaries, journals, textbooks, and other publications. Statisticians writing near the time § 195 was enacted defined a "sample" as "[a] part of a population, or a subset from a set of units, which is provided by some process or other . . . with the object of investigating the properties of the parent population or set." Maurice G. Kendall & William R. Buckland, *A Dictionary of Statistical Terms* 254 (1957).[3] In other words, "sampling" is understood as "the selection of part of an aggregate of material to represent the whole." Frank Yates, *Sampling Methods for Censuses and Surveys* 1 (3d ed. 1953). Thus, whereas a "census" "must by definition, be complete," a "sample" is a survey of "less than 100 per cent" of the relevant population. W. Edwards Deming & Frederick F. Stephan, *On the Interpretation of Censuses as Samples*, 36 J. Am. Stat. Ass'n 45, 45 (1941).

The Bureau's hot-deck imputation procedure is unmistakably a form of sampling under the definition put forward by the Bureau itself and embraced in the field of statistics. It results in a count in which "the whole is represented by less than the whole." Specifically, information on a portion of the population—the "donor" households—is used to make inferences about unobserved portions of the population, namely, those classified as "unknown." Thus, in a particular census tract, the "whole" population of that tract is represented by an actual count of "less than the whole" because the final count includes estimates of units not

[3] *Accord* Tommy Wright, *Selected Moments in the Development of Probability Sampling: Theory and Practice*, 13 Am. Stat. Ass'n Surv. Res. Methods Sec. Newsltr. 1 (July 2001) ("When examination of each and every unit in the population . . . is undesirable or impractical, a *sample*, *i.e.*, a subset or portion of the population, may be selected to yield satisfactory information."); Raymond J. Jessen, *Statistical Survey Techniques* 13 (1978) ("If we confine our observations to anything fewer than all the elements of the universe in which we are interested, we shall say we are using a *sample*.").

counted. Accordingly, there can be no doubt that the hot-deck imputation used in the 2000 census is a form of sampling. See *House of Representatives*, 525 U.S. at 324-25.

Indeed, the Bureau itself implicitly advanced this very position in the *Census 2000 Report*. There, the Bureau discussed "imputation" as the first of several examples under the subheading "Reliance on Sampling in Previous Censuses." *Census 2000 Report* at 23 (AR at C00155). Thus, in an attempt to persuade Congress to accept the sampling proposal described in the Report, the Bureau obviously attempted to give Congress the impression (quite correctly) that it was already engaged to some extent in "[r]eliance on [s]ampling" in the apportionment count, by virtue of hot-deck imputation.

Although the Bureau now struggles to distance itself from that concession, its creative backtracking must be rejected as contrary to the plain language of the statute. The clear-cut definitions adopted in the Bureau's own documents and confirmed by the above statistical texts admit of no limitation to "premeditated" or "random" methods of sampling.[4] Thus, the Court should construe the statute in accordance with its plain language and decline to embrace limitations not enacted by Congress. See, *e.g.*, *EEOC* v. *Arabian Am. Oil Co.*, 499

[4] Moreover, the notion that the term "sampling" refers only to random sampling procedures is contrary to the established meaning of that term. Statistical textbooks, dictionaries, and other scholarly publications use the term "sampling" to refer to random *and* non-random sampling procedures alike. *See* Frederick F. Stephan, *History of the Uses of Modern Procedures*, 43 J. Am. Stat. Ass'n 12, 20 (1948) ("modern sampling practice rests on processes of selecting individuals at random *or* according to certain systematic procedures") (emphasis added); Gary T. Henry, *Practical Sampling* 17 (Applied Social Research Methods Series Vol. 21, 1980) ("Approaches to sample selection fall into two broad categories: probability [or random] *and* nonprobability sampling.") (emphasis added); Arlene Fink, *How to Sample in Surveys* 17 (1995) ("Nonprobability samples are created because the units appear representative or because they can be conveniently assembled.").

U.S. 244, 255 (1991) (rejecting an argument that the term "employer," as used in Title VII, "means only, 'American employer'").

2. Even if there were any doubt as to the meaning of the statute, any such ambiguity, as this Court held in *House of Representatives*, must be resolved by evaluating the statutory provision against "the historical background of the decennial census and the Act that governs it." 525 U.S. at 335. As in *House of Representatives*, the historical context relevant here "is provided by over 200 years during which federal statutes have prohibited the use of statistical sampling where apportionment is concerned." *Id.* at 340.

Although § 195 was not enacted until 1957, this Court recognized in *House of Representatives* that Congress has forbidden the use of methods of estimation since the founding era: "From the very first census, the census of 1790, Congress has prohibited the use of statistical sampling in calculating the population for purposes of apportionment." *Id.* at 335. Throughout most of the history of the Census Act, this prohibition was implicit in the method of enumeration prescribed by Congress: Congress consistently "requir[ed] enumerators to 'visit personally each dwelling house in his subdivision' in order to obtain 'every item of information and all particulars required for any census or survey' conducted in connection with the census." *Id.* at 336 (quoting Act of Aug. 31, 1954, § 25(c), 68 Stat. 1012, 1015).

Section 195 was Congress's "first departure from the requirement that the enumerators collect all census information through personal visits to every household." *Id.* When first enacted in 1957, this section provided that "[e]xcept for the determination of population for apportionment purposes, the Secretary may, where he deems it appropriate, authorize the use of the statistical method known as 'sampling.'" 13 U.S.C. § 195 (1970). Although Congress amended § 195 in 1976 by "changing the phrase 'may, where he deems it appropriate' to 'shall, if he considers it feasible,'" 525 U.S. at

338-39, this Court concluded in *House of Representatives* that "the section maintains its prohibition on the use of statistical sampling in calculating population for purposes of apportionment." *Id.* at 339-40.

In so doing, the Court recognized that the structure of the statute left some ambiguity as to whether it was intended "as either permissive or prohibitive with regard to the use of sampling for apportionment purposes." *Id.* at 339. It held, however, that the ambiguity was resolved by the historical background noted above. Specifically, the Court held that, in light of the longstanding requirement of personal visits by census enumerators (a requirement that remained on the books until after the initial enactment of § 195), the Court could not assume that Congress intended to permit the use of sampling in the apportionment count. *Id.* at 340.

The historical context of the Census Act similarly forecloses the creative distinctions put forward by the Bureau and embraced by the majority below. In fact, in 1957, when Congress first authorized the use of "sampling" for non-apportionment purposes in enacting § 195, the Bureau was still required to gather population data by the exclusive method of personal visits by census enumerators. Thus, when Congress first used the term "sampling" in the Census Act, it surely did not have in mind a narrow conception of that term that would permit the use of last-resort, non-random methods of estimation like hot-deck imputation.

Indeed, a House Report issued at the time of the statute's 1957 enactment confirms that the Congress that enacted § 195 did not contemplate any fine distinctions based on the "premeditated" or "random" nature of the sampling at issue. Specifically, the report explained that:

> The purposes of section 195 in authorizing the use of sampling procedures is to permit the utilization of *something less than a complete enumeration*, as implied by the word 'census,' when efficient and accurate

> coverage may be effected through a sample survey. Accordingly, except with respect to apportionment, the Secretary of Commerce may use sampling procedures when he deems it advantageous to do so.

H.R. Rep. No. 85-1043, at 10 (quoted in AR at C01219) (emphasis added).

In short, when Congress enacted § 195, it was legislating against the backdrop of a longstanding requirement of "a complete enumeration" unaided by any statistical adjustment of any sort. Its authorization of "sampling" for non-apportionment purposes was meant only to relax the requirement of a complete enumeration by means of personal visits. Congress plainly did not intend to authorize sampling of any sort in the apportionment count, much less to draw the hair-splitting distinctions embraced by the majority below.

3. Finally, the district court's narrow limitations on the statutory prohibition must be rejected on the ground that they threaten to nullify the statutory prohibition as well as this Court's decision in *House of Representatives*. Imputation has the same practical effect as the random sampling method struck down in that decision; the two methods cannot meaningfully be distinguished from each other on either of the grounds suggested by the district court. Accordingly, if the district court's decision stands, the Bureau will be free, in the future, to use imputation to achieve precisely the result it sought to achieve using the method invalidated in *House of Representatives*. Congress could not have intended to enact a meaningless prohibition that is so easily nullified.

a. As noted earlier, the sampling procedure in *House of Representatives* was designed "to supplement data obtained through traditional census methods." 525 U.S. at 324. Specifically, the Bureau planned to use "information gathered from the . . . housing units" in each census tract that the Bureau visited during the non-response follow-up process "to estimate the size and characteristics of the nonresponding

housing units [in the same tract] that the Bureau did not visit." *Id.* at 325. It is undisputed that the same is true of hot-deck imputation.

Moreover, as shown in the diagram above, see *supra* at 9, hot-deck imputation has the same practical effect as the random sampling method at issue in *House of Representatives*. First, in both cases, a "sample" is selected from a donor pool. Under the Bureau's proposed random sampling method, as depicted in the left column of the diagram, the donor pool consists of the 20 housing units that the Bureau selects randomly from among the 30 non-responding units. After exhausting its non-response follow-up efforts with respect to all 20 units, the Bureau selects ten of those units as samples—each by virtue of its geographic proximity to one of the ten remaining units. With hot-deck imputation (as depicted in the right column), by contrast, the 29 non-responding units are selected (non-randomly) for inclusion in the donor pool because, for whatever reason, they were successfully enumerated during the non-response follow-up process. A single unit from that donor pool is then selected as the sample, again by reference to its geographic proximity to a single unenumerated unit.

Second, information from the sample is used to estimate the characteristics of the unobserved portion of the population. In the case of the random sampling method at issue in *House of Representatives*, information from each sample (*i.e.*, each of the ten households enumerated during the non-response follow-up process that was selected by virtue of its proximity to an unenumerated unit) is used to estimate the characteristics of one of the ten households that were excluded from that process. With hot-deck imputation, information from the sample (*i.e.*, the unit selected from the donor pool by reference to its proximity to an unenumerated unit) is used to estimate the characteristics of the one unit whose occupancy characteristics could not be determined through the Bureau's follow-up efforts.

Thus, as a practical matter, the only difference between the two procedures is that the random sampling procedure is used to estimate a larger percentage of the population. But that difference is as legally irrelevant as it is practically fortuitous. For example, under the method invalidated in *House of Representatives*, the Bureau could have decided to "scale down" the use of sampling by choosing to estimate the characteristics of only one percent (or, as in this case, 0.4%) of the population, rather than ten percent. Under this Court's decision, the method would still have constituted unlawful sampling. Indeed, the Court expressly held that the *extent* of the Bureau's reliance on statistical sampling has no bearing on the lawfulness of that conduct under § 195. See 525 U.S. at 342 ("[w]hether used as a 'supplement' or as a 'substitute,'" sampling cannot be used in determining the apportionment count).

Alternatively, the Bureau could decide to "scale up" its use of the hot-deck imputation method at issue here so as to estimate the same percentage of the population that it proposed to estimate by the method struck down by this Court. All the Bureau would have to do is to stop its non-response follow-up efforts once it has reached all but ten percent of the population. It could then use the nearest enumerated neighbor of each remaining household to estimate that household's occupancy. Congress could not have intended to adopt such a meaningless prohibition on sampling that could be so easily evaded.

b. Nor can a statistical procedure's lawfulness depend on whether it uses "random" or "non-random" sampling. As noted above, if hot-deck imputation were upheld on the ground that § 195 does not extend to non-random methods of estimation, the Bureau could easily expand its use of that method to estimate increasingly larger portions of the population—up to and even exceeding the 10% it planned to estimate using the procedure at issue in *House of Representatives*. The Bureau could accomplish that result,

not only by deciding to cease its follow-up efforts once it has obtained hard data on all but a certain percentage of the addresses in the tract, but also by devoting fewer resources to the non-response follow-up process (*e.g.*, making only one follow-up visit instead of six), or by making it more difficult for census enumerators to remove invalid addresses from the Master Address File. Both of those adjustments would increase the number of addresses that would remain unclassified at the end of the non-response follow-up process, and thereby increase the number of housing units that would be subjected to imputation. See JA 53-55.

Under the district court's reasoning, as long as the Bureau made an initial attempt to enumerate all housing units and used non-random sample selection procedures to designate the "donor" used to estimate each nonresponding unit, there would be nothing to stand in the way of this end-run around the statute. Again, Congress could not have intended a prohibition on sampling that could be so easily evaded.

Indeed, the district court's approach would ascribe to Congress the intention not only to sanction nullification of § 195, but to do so in a particularly perverse way. The undisputed factual record establishes that non-random methods of sampling are, if anything, *less* reliable than random methods. JA 51-53. Both forms of sampling rely on the assumption that non-responding housing units are "similar" to neighboring donor units used to estimate their occupancy characteristics. And that assumption was arguably defensible under the Bureau's random sampling procedure because the donor units were distributed randomly among all non-respondents.

The donor units used in hot-deck imputation, by contrast, are demonstrably different from the estimated units in that the Bureau was able to enumerate the former, but not the latter, during the non-response follow-up process, even after as many as six follow-up visits. As the record below indicates, such units most reasonably can be assumed to be unoccupied

or non-existent, and thus the "donor" units, which are unquestionably occupied, are hardly representative of the estimated units.[5] See JA 51-52. Congress can hardly be deemed to have intended to prohibit relatively reliable methods of statistical sampling (like the random procedure struck down in *House of Representatives*), while preserving relatively unreliable methods of statistical sampling (like hot-deck imputation). See, *e.g.*, *United States* v. *American Trucking Ass'ns*, 310 U.S. 534, 543 (1940). To indulge such an assumption would be to deprive § 195 of any meaning.

c. Finally, the Bureau's ability to circumvent § 195 and this Court's *House of Representatives* decision cannot be meaningfully constrained on the alternative basis suggested by the district court—that "sampling" refers only to estimation methods in which the sample is "pre-identified" during the "data collection stage" of the procedure, and not to methods like hot-deck imputation that are allegedly "used only at the data processing stage." JS App. 21a. Like the district court's random/non-random distinction, this rationale would also allow the Bureau to "scale up" its use of sampling as much as it pleases, as long as it does so indirectly rather than directly—for example, by reducing the number of follow-up visits or making it more difficult to remove addresses from the Master Address File.

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[5] Again, the point may be illustrated by referring to the diagram set forth above, *supra* at 9. Under the 1997 plan struck down in *House of Representatives* (the left column), the units randomly selected for inclusion in the donor pool (the shaded boxes) would have been representative of the unenumerated units (the black boxes) that they were used to estimate. Under the method of imputation actually employed in the 2000 census (the right column), however, none of the units in the donor pool (the shaded boxes) were representative of the estimated units (the single black box). In fact, the unit represented by the black box was by definition unique: it was the one unit in the tract that could not be enumerated after six visits, and for that reason cannot fairly be assumed to have occupancy characteristics similar to those of units that *were* enumerated.

In any event, the district court's distinction is illusory. The Bureau obviously knew with absolute certainty that it would use hot-deck imputation to try to account for apparently unenumerated households, even if it did not know *where* such method would be called for. In that sense its use of this method of sampling was premeditated. Moreover, as the above diagram demonstrates, *supra* at 9, both the procedure invalidated in *House of Representatives* and the method of hot-deck imputation necessarily involve the two-step process of (1) data collection (in the form of gathering household size data from a "donor" unit as well as all of the other units for which actual data are collected) and (2) data processing (in the form of making the assumption that the unenumerated unit has the same number of occupants as the donor unit). See 525 U.S. at 324; JA 48-49. Both steps are necessarily required of any method that purports to provide estimates in place of an actual count, and this distinction is accordingly without substance.

B. At A Minimum, Occupancy And Status Imputation Plainly Violate the Census Act.

Although hot-deck imputation is categorically irreconcilable with the Census Act for the reasons explained above, the Court need not condemn all forms of imputation to rule in favor of appellants. The Bureau's methods of "occupancy imputation" and "status imputation" are particularly offensive to the statutory scheme—so much so that they are unlawful even under the standards adopted by the district court below and by the dissenting opinions in *House of Representatives*. Because it is undisputed that these methods alone cost Utah its fourth seat in the House of Representatives, see JA 55-56; Exs. A & B, Wolfson Decl., *Utah* v. *Evans*, No. 2:01-CV-292G (D. Utah filed June 11, 2001), the Court may, if it so chooses, rule in appellants' favor on the narrow ground that occupancy and/or status imputation are unlawful.

1. As already explained, the Bureau used three forms of hot-deck imputation in the 2000 census: (1) "household size imputation" to estimate the occupancy characteristics of units that it believed to be occupied, but for which the Bureau had not determined an occupancy count; (2) "occupancy imputation" to estimate units that it had not designated as either occupied or vacant; and (3) "status imputation" to generate estimates for addresses that the Bureau had not identified as representing existing housing units (*i.e.*, as opposed to demolished houses, businesses, or other non-residential properties). See DOJ Mem. 22 ¶ 12. Ironically, the majority below sought to justify imputation by relying in part on grounds that apply only to household size imputation—and that unwittingly condemn occupancy and status imputation.

Specifically, the Bureau defended its use of household size imputation by suggesting that, because units estimated through this procedure are known to contain at least one occupant, it would be unfair to assign an occupancy count of zero simply because the number of occupants is unknown. See *id.* at 24 ¶ 14 (suggesting that it would be wrong to "imput[e] '0' occupants to a household known to be occupied"); Hogan Decl. at 22 ¶ 36, *Utah* v. *Evans*, No.2:01-CV-292G (D. Utah filed July 11, 2001) ("[T]he use of count imputation furthered th[e] goal [of numeric accuracy] by imputing a nonzero value for housing units, some of which demonstrably are occupied."). The district court majority similarly argued that it could not invalidate the Bureau's use of hot-deck imputation without "[f]orcing [the Bureau] to ignore" what it described as "valid residences." JS App. 25a.

Even if this tortured effort to circumvent § 195 were accepted, it would provide no refuge for either occupancy or status imputation. Unlike units estimated through household size imputation, addresses subjected to status and occupancy imputation are *not* known to represent *occupied* units—notwithstanding the district court's confusing, cryptic assertion to the contrary (JS App. 25a n.9). By the same token, *none* of the so-called "persons" estimated through

occupancy and status imputation are known to exist, much less live at the address in question. Such persons are therefore added to the apportionment count through statistical sampling alone, and their inclusion in the apportionment count was therefore unlawful even under the standard offered by the Census Bureau and embraced by the majority below.

2. Although the majority opinion in *House of Representatives* is of course the opinion that is binding on this Court, it is also significant that the Bureau's use of status and occupancy imputation cannot be defended under either of the dissenting opinions issued in *House of Representatives*. For example, Justice Breyer suggested in his dissent that under the Census Act, the use of sampling procedures was an appropriate means of "supplement[ing] a traditional headcount," *i.e.*, "to fill in gaps in [the] headcount." 525 U.S. at 352-53 (Breyer, J., dissenting). In the same discussion, he also suggested that hot-deck imputation has been used to fill that role in the last several decennial censuses. *Id.* at 352.

Significantly, however, Justice Breyer's analysis made clear that he was referring only to household size imputation, and not to occupancy or status imputation. See *id.* ("When an enumerator *believes a residence is occupied* but is unable to obtain any information about how many people live there, the Census Bureau 'imputes' that information based upon the demographics of nearby households.") (emphasis added). Unlike household size imputation, occupancy and status imputation cannot plausibly be considered means of "fill[ing] gaps in the headcount" because no one even knows if the addresses at issue correspond to housing units or, if so, whether those units are occupied. In short, no one knows whether there is even a "head" to be counted.

Also, unlike the sampling method at issue in *House of Representatives*, status and occupancy imputation do not address the problem of counting "the last few of the *households* that do not respond by mail." *Id.* at 356 (Breyer, J., dissenting) (emphasis added). Using status imputation, the

Bureau does not know whether the addresses at issue correspond to a dwelling unit, much less an actual *household*. Cf. *The American Heritage Dictionary of the English Language* 638 (1970) (defining "household" as "[a] domestic establishment including members of a family and others living under the same roof"). Thus, when the Bureau uses status imputation, it does not know whether the address represents a "household" at all.

The same is true of occupancy imputation: Although the Bureau presumably knows that the address corresponds to a dwelling unit, it does not know whether anyone actually lives under the roof of that unit, and therefore does not know whether there is any "household" at that address.

3. For similar reasons, the Bureau's use of status and occupancy imputation is unlawful under the reasoning of Justice Stevens. According to Justice Stevens, a statistical method is allowed by the Census Act (and the Constitution) if it "will make the census more accurate than an . . . attempt to count every individual by personal inspection, interview, or written interrogatory." 525 U.S. at 364 (Stevens, J. dissenting). That cannot be said here.

First, there is no evidence in the record that either status or occupancy imputation has that effect. While the Bureau argues that imputation is necessary to offset inaccuracies that might otherwise result from assigning an occupancy count of zero "to a household known to be occupied," DOJ Mem. 24 ¶ 14, the same argument does not apply with respect to occupancy imputation, in which the Bureau has no information upon which to conclude that the address is deemed to represent an occupied housing unit. Much less does the Bureau's argument apply with respect to status imputation, in which the Bureau has no information as to whether the address in question represents an existing housing unit, as opposed to vacant property or a non-residential structure.

Second, there is ample evidence that non-random sampling does *not* "make the census more accurate than an . . . attempt to count every individual." 525 U.S. at 364 (Stevens, J., dissenting). As explained at length, *supra* at 28-29, random sampling is significantly more reliable and accurate, as a scientific matter, than non-random methods such as hot-deck imputation. And that is especially true of occupancy and status imputation, which lack any nexus to any data regarding known individuals.

Third, it is undisputed that imputation was not designed to correct the under-representation of traditionally under-represented groups, such as minorities and children. See *supra* at 7. Thus, unlike the random sampling procedure struck down in *House of Representatives*, hot-deck imputation—and especially status and occupancy imputation—cannot be said to increase the accuracy of the census in this respect.

Fourth, even if the Bureau could show that the use of status and occupancy imputation improves the *numerical* accuracy of the census in some sense, that showing would be insignificant here because the Bureau has acknowledged that it cannot show that the use of any form of hot-deck imputation improves the *distributive* accuracy of the decennial census. DOJ Mem. 15 ¶ 35. As explained previously, the term "distributive accuracy," as used in connection with the decennial census, refers to the Bureau's ability to ascertain accurately the manner in which the nationwide population is distributed among the 50 states, which is the distinguishing component of any census that can be said to further the "'constitutional goal of equal representation.'" *Wisconsin* v. *City of New York*, 517 U.S. 1, 20 (1996); *Franklin* v. *Massachusetts*, 505 U.S. 788, 804 (1992).

In sum, the district court erred in concluding that hot-deck imputation is consistent with the Census Act. The Court should reach that conclusion either by condemning imputation categorically as a method of sampling, or at a minimum by holding that occupancy and status imputation

fail under any understanding of the governing statutory scheme.

II. IMPUTATION IS INCONSISTENT WITH THE "ACTUAL ENUMERATION" REQUIRED UNDER THE CENSUS CLAUSE.

Hot-deck imputation is also unlawful on constitutional grounds. The Census Clause calls for an apportionment based on an "actual enumeration," which contemplates an actual count and does not sanction the use of statistical estimates. This construction of the Census Clause finds support not only in the textual and historical evidence before the Court in *House of Representatives*, but also in a wealth of additional evidence from the Founding period. As set forth in detail below, this evidence demonstrates that "actual enumeration" was a term of art used consistently in the founding era to contrast an actual count from an estimate, and that the Framers understood the Census Clause to prescribe such a limitation on the conduct of the census. Moreover, none of the district court's attempts to sidestep this conclusion withstands analysis. Unless the constitutional prescription of an "actual enumeration" is to be disregarded entirely, the Court should hold that the Census Clause requires an actual count and does not sanction the use of hot-deck imputation.

A. Imputation is Incompatible With the Original Understanding of an "Actual Enumeration."

The district court's failure even to attempt to reconcile the Bureau's use of hot-deck imputation with the original understanding of the plain language of the Census Clause is hardly surprising. There simply is no plausible understanding of the terms "actual enumeration" that would permit the apportionment of Representatives to be determined on the basis of statistical estimates.

1. As the concurring opinion in *House of Representatives* pointed out, dictionaries contemporaneous with the ratifica-

tion of the Constitution reveal that "an 'enumeration' requires an actual counting, and not just an estimation of number":

> Noah Webster's 1828 American Dictionary of the English Language defines "enumerate" as "[t]o count or tell, number by number; to reckon or mention a number of things, each separately"; and defines "enumeration" as "[t]he act of counting or telling a number, by naming each particular," and "[a]n account of a number of things, in which mention is made of every particular article." Samuel Johnson's 1773 Dictionary of the English Language 658 (4th ed.) defines "enumerate" as "[t]o reckon up singly; to count over distinctly; to number"; and "enumeration" as "[t]he act of numbering or counting over; number told out." Thomas Sheridan's 1796 Complete Dictionary of the English Language (6th ed.) defines "enumerate" as "[t]o reckon up singly; to count over distinctly"; and "enumeration" as "[t]he act of numbering or counting over."

525 U.S. at 347 (concurring opinion) (alterations in original). The notion of "counting 'singly,' 'separately,' 'number by number,' 'distinctly,' which runs through these definitions is incompatible . . . with gross statistical estimates," *id.*, such as those generated by hot-deck imputation.

Moreover, as if to remove the possibility of any ambiguity, the Census Clause prescribes an *actual* enumeration—an enumeration, in other words, "really in act," not just "purely in speculation." Samuel Johnson, *A Dictionary of the English Language* (4th ed. 1773). Hot-deck imputation falls several steps short of the *actual* performance of an enumeration "really in act."

First, the Bureau's methodology in the 2000 census called for an estimate as a substitute for an actual count where enumerators identified a housing unit and determined that it was occupied, but could not determine the number of occupants in such a unit. This method of "household size

imputation" falls short of an actual enumeration—a count "really in act"—in that the Bureau had no actual knowledge as to the number of occupants that live in a housing unit estimated through this procedure. The number is thus the product of statistical "speculation," not data derived from a count performed "really in act."

The Bureau's methods of "occupancy imputation" and "status imputation" are even further removed from the actual performance of an enumeration "really in act." Under those methods, the Bureau used an estimate in place of an actual count where enumerators could not determine whether an address on the Master Address File represented an occupied housing unit. And it did so even when enumerators could not determine whether the address represented a valid housing unit and not a business, storage unit, or even a typographical error. See JS 4; see also *supra* at 8.

In these circumstances, there can be no doubt that the numbers derived by the Bureau were the product of pure statistical speculation and not a count performed "really in act." The Bureau lacked knowledge not only as to the number of occupants in a particular unit, but even as to the fundamental question of whether such a unit existed as a valid household. Because it is undisputed that this method alone cost Utah its fourth seat in the House of Representatives, the Court need reach no further than the conclusion that the statistical imputation of persons presumed to be living at addresses not known even to exist is not an "actual enumeration."

In sum, it is difficult to imagine a phrase that more clearly would demand an actual count over a mere estimate than the phrase "actual enumeration." Even the phrase "physical headcount" does not quite capture the distinction, inasmuch as traditional methods of enumeration have always included gathering data from heads of households on individuals not physically present, but known to reside in the household. See 525 U.S. at 335-36. Thus, the requirement of an "actual

enumeration" uniquely identifies the relevant difference between a statistical estimate and an actual count.[6]

2. Although the district court made no effort to suggest an alternative definition of "enumeration" that would be compatible with the use of imputation, the Solicitor General has cited a 1933 edition of the *Oxford English Dictionary* that defines enumeration as the "action of ascertaining the number of something." SG Mot. 21. This conception of an enumeration, however, is not the understanding that prevailed during the founding era. Indeed, the founding-era dictionary meaning set forth above is confirmed by an extensive record of historical usage.

This historical record—most of it uncovered since the decision in *House of Representatives*[7]—demonstrates that "actual enumeration" was a term of art in the founding era, and was used to refer to a population count based on actual data. As explained in detail below, the Framers' generation consistently identified a distinction between the method of enumeration and the alternative of statistical estimation, and even acknowledged the (supposedly modern) objections that the former was inherently costly and inevitably would result

[6] To be sure, the Census Clause goes on to vest in Congress the authority to effect the actual enumeration "in such Manner as [it] shall by Law direct." U.S. Const. art. I, § 2, cl. 3. But Congress's discretion is limited by "'the constitutional language.'" *Wisconsin*, 517 U.S. at 19-20. Thus, Congress's constitutional authority to direct the "manner" of the taking of the census leaves it free to decide which enumerative methods it will embrace (such as whether to send questionnaires by mail and whether and to what extent to require follow-up visits by individual enumerators). But this language cannot be read to trump the requirement of an "actual enumeration" and to permit a census by non-enumerative methods such as statistical estimation.

[7] The historical discussion here borrows from a forthcoming publication, by one of appellants' counsel, which treats these issues in greater detail. *See* Thomas R. Lee, *The Original Understanding of the Census Clause: Statistical Estimates and the Constitutional Requirement of an "Actual Enumeration,"* 77 Wash. L. Rev. 1 (2002).

in an undercount. Thus, the record of consistent historical usage confirms the founding-era dictionary definitions and demonstrates that an "actual enumeration" is not just any method of "ascertaining the number" of something, but a specific method of compiling actual data.[8]

a. In colonial times, the populations of the various colonies were estimated and enumerated primarily as a result of inquiries from the British Board of Trade. See Lee, *supra* at 41-47. Because of the cost and difficulty of conducting an actual enumeration, "[c]olonial governors looking for data . . . often had to resort to estimates in order to satisfy the Board of Trade." James H. Cassedy, *Demography in Early America: Beginnings of the Statistical Mind, 1600-1800*, at 72 (1969). Contemporaneous accounts of the colonial reports to the Board of Trade consistently distinguished between "estimates" and "enumerations." In his 1792 History of New

[8] Until recently, the Bureau itself consistently embraced a similar understanding of the Census Clause. *See* Bureau of the Census, *A Century of Population Growth* 9 (1909) (distinguishing between population assessments rendered "upon the basis of enumerations" and those based on mere "estimates."); Census Undercount Adjustment: Basis for Decision, 45 Fed. Reg. 69,366, 69,371 (Oct. 20, 1980) ("[t]he term 'actual Enumeration'" refers specifically to "a census or a headcount" and prohibits the use of estimates in the apportionment count) (AR at C01218); *id.* at 69,372 ("the framers of the Constitution drew a clear distinction between an 'actual Enumeration' and an estimate, regardless of its underlying methods") (AR at C01219). More recently, even when the Bureau decided to use the random sampling methodology struck down in *House of Representatives*, the Bureau submitted a report to Congress that drew a sharp distinction between "traditional physical enumeration methods" and non-enumerative "statistical methods" like imputation. *Census 2000 Report*, at x, 23; *id.* at 23 ("statistical methods" such as imputation are used to "correct for problems in physical enumeration") (AR at C00155). And, in the lower-court proceedings in *House of Representatives*, the Bureau told the district court that "*no constitutional* difference exists between sampling and the [hot-deck] imputation methodology." Defs.' Mem. in Opp. to the House's Mot. for Summ. J., at 27 n.20; *United States House of Representatives* v. *United States Dep't of Commerce*, No. 98-456 (D.D.C. filed May 4, 1998).

Hampshire, for example, Jeremy Belknap discussed the estimates and enumerations in that colony in the 1770s:

> The number of people . . . in 1767, was *estimated* at 52,700. Another *estimate* was made in 1774, of which I have met with no official account; but have been informed that it was 85,000. . . . A survey taken in 1775, *partly by enumeration* and *partly by estimation*, for the purpose of establishing an adequate representation of the people, made the whole number 82,200.

3 Jeremy Belknap, *The History of New Hampshire* 233-34 (1792) (emphasis added).[9]

Several of the Framers used the constitutional terminology this way prior to the Constitution's passage. John Adams, for example, noted in correspondence in 1780 that "some States ha[d] made . . . returns" of population "by authentic numerations of the people and regular and official returns," while other states hade made mere "estimates" based on some degree of "speculation." 7 *The Life and Works of John Adams* 272, 302-03 (Charles Francis Adams ed., 1852). James Madison used these same words in similar fashion in discussing the apportionment of war debt under the Articles of Confederation. He asserted that at that time "no actual numeration of the inhabitants of each State ha[d] yet been obtained by Congress," and thus concluded that an estimated or "computed number" would have to "form[] the basis of the

[9] *See also* Lee, *supra* at 43 (discussing the Connecticut General Assembly's 1755 authorization of an "enumeration" in the face of the Board's rejection of a previous estimate of population); Timothy Pitkin, *A Statistical View of the Commerce of the United States of America* 582-83 (New Haven 1835) (noting that "[i]n some of the colonies . . . actual enumerations were made—this took place in Connecticut in 1756 and in 1774, and we believe in Massachusetts; while in others, estimates were made, founded upon the number of taxable polls, or the number of the militia").

first requisition of the States." 22 *Journals of the Continental Congress*, 1774-1789, at 159 (W.C. Ford ed., 1908).[10]

b. Although there apparently was no recorded debate explicitly addressing the meaning of the words "actual enumeration" when they were added to the Constitution by the Committee of Style, see 2 *Records of the Federal Convention of 1787*, at 590 (M. Farrand ed., 1966), the tenor of the broader discussion surrounding the Census Clause suggests that the Framers undoubtedly embraced the original meaning of those words. From the outset of the debates on this Clause, the Framers' overriding concern was to provide a "permanent and precise standard" for apportionment. See 1 Farrand, *supra* at 578. They understood that any standard that preserved discretion in the hands of the political officers controlling the census would encourage an unseemly manipulation—as "those who have power in their hands will not give it up while they can retain it," but "will always when

[10] The constitutional terminology was used in this same sense on the other side of the Atlantic, as is illustrated by a widely published 18th-century debate about the size of the British population. *See* Lee, *supra* at 21-39. In the course of this debate, Richard Price and others used early methods of sampling to develop estimates of Britain's population—which suggested it was declining. *See* Richard Price, *An Essay on the Population of England, From the Revolution to the present Time* (2d ed. 1780), *reprinted in The Population Controversy* (D.V. Glass ed., 1973). Critics of these assessments consistently drew a stark distinction between an "actual enumeration" of population and a mere "estimate." Arthur Young, for example, complained that Price's assessment of "the number of houses" was "not from an actual enumeration, (for none was ever yet made) but *calculated* from the [rolls of the] hearth tax." Arthur Young, *Reply to Dr. Price To the Printer of the St. James Chronicle* 322, 324 (Mar. 28, 1772), *reprinted in* Glass, *supra*. William Eden acknowledged that "enumerations are perhaps impracticable in great states" and that "recourse must be had to inductions from the comparison of collateral circumstances at different times," but he also complained that Price's conclusions "were founded on conjectural estimates, and not on actual enumerations." William Eden, *Letters to the Earl of Carlisle, from William Eden, Esq.* xii, 185 (1780), *reprinted in* Glass, *supra*.

they can rather increase it." *Id.* See also *Franklin*, 505 U.S. at 791 (requirement that a new census be conducted every ten years was designed "to ensure that entrenched interests in Congress did not stall or thwart needed reapportionment").

This overriding policy consideration initially arose in the context of the debate over whether to reapportion members of Congress on the basis of an assessment of the States' wealth, as opposed to (or in addition to) their population. See 1 Farrand, *supra* at 582. One early version of the Census Clause would have called for reapportionment "according to the principles of wealth & population." *Id.* The wealth criterion, however, was abandoned on the basis that it would have required an "estimate" and accordingly would have introduced too much discretion:

> Mr. Sherman thought the number of people alone the best rule for measuring wealth as well as representation; and that if the Legislature were to be governed by wealth, they would be obliged to estimate it by numbers. He . . . had been convinced by the observations of (Mr. Randolph & Mr. Mason) that the *periods* & the *rule* of revising the Representation ought to be fixt by the Constitution.

Id.; see also Lee, *supra* at 49-50 (discussing similar views of Paterson, Mason, and Hamilton).

The Framers' concern as to the imprecision and manipulability of the wealth criterion surely would have been understood to foreclose estimates of population.[11] Indeed,

[11] Indeed, the records of the Constitutional Convention make an express reference to the possibility of an "estimate" of population, and indicate a clear understanding of the difference between such an estimate and a count of actual numbers. Nathaniel explained that "in Massts. *estimates* had been taken in the different towns" in an attempt to ascertain their populations. 1 Farrand, *supra* at 587. He then went on to note that "persons had been curious enough to compare these estimates with the respective *numbers* of people," and in so doing had concluded that a

delegates to the Convention squarely rejected an early version of the Census Clause that called for a "census and estimate," 1 Farrand, *supra* at 564, adopting instead the standard of an "actual enumeration"—a "rule of revising the Representation" that was "fixt" and "permanent and precise." This insistence on a fixed, precise rule over a subjective standard of estimation is thoroughly undermined by a system that preserves in Congress the discretion to adopt a different standard for estimating the population every ten years. See 525 U.S. at 348 (concurring opinion) (to give Congress the discretion to select "among various estimation techniques" is to give "the party controlling Congress the power to distort representation in its own favor").[12]

c. Subsequent statements by delegates to the Constitutional Convention confirm that they understood the Census Clause to impose a fixed standard for apportionment and to foreclose the possibility of estimation. When the first Census Bill came up for debate in Congress, James Madison proposed that the census be expanded beyond "the bare enumeration of the inhabitants" and that it also gather data concerning "the several classes into which the community was divided." James Madison, Census Bill, House of Repre-

measure of population was also an accurate indicator of wealth. *Id.* Nevertheless, Gorham "support[ed] the propriety of establishing numbers as the rule" for reapportionment. *Id.* Gorham and his colleagues, then, surely understood the concept of an "estimate" of population, and their decision to require an "actual enumeration" cannot reasonably be cast aside as a meaningless stylistic change.

[12] As Utah demonstrated below, hot-deck imputation provides the Bureau with extensive opportunities to manipulate the census and its resulting apportionment. *See* JA 53-55. For example, the unrefuted evidence shows that, if non-random sampling is generally allowed, the Bureau could easily alter the impact and extent of hot-deck imputation by substituting a different statistical algorithm for the "nearest neighbor" method currently employed, by reducing the resources it dedicates to the non-response follow-up process, or by changing the procedures for adding or removing addresses from the Master Address File. *See id.*

sentatives 25–26 Jan., 2 Feb. 1790, *Papers of James Madison* 13:8–9, 15–16, *quoted in* 2 Philip B. Kurland & Ralph Lerner, *The Founders' Constitution* 139 (1987). Madison's proposal was roundly rejected, mainly because of concerns about practicability and complexity. In response to this objection, Madison argued that the "enumeration" required by the Constitution would itself be even more complex:

> If the object to be attained by this particular *enumeration* be as important in the judgment of this house, as it appears to my mind, they will not suffer a small defect in the plan, to defeat the whole. And I am very sensible, Mr. Speaker, that there will be more difficulty attendant on the taking the census, *in the way required by the constitution*, and *which we are obliged to perform*, than there will be in the additional trouble of making all the distinctions contemplated in the bill.

Id. (emphasis added). Thus, Madison understood the constitutional prescription of an "actual enumeration" as a specific prescription of "the way" that the census should be taken, not as a mere stylistic addition, nor as blanket authority for any conceivable method of assessing the population. Although an actual enumeration would be "difficult," Madison nonetheless acknowledged that Congress was "obliged to perform" the census in this manner.

George Washington and Thomas Jefferson shared this same understanding. In their correspondence discussing the returns from the first census, Washington and Jefferson lamented the fact that the returns from the "enumeration" had fallen short of their "estimates" of the population and failed accurately to reflect the true population. In a letter to William Short, for example, Jefferson wrote as follows:

> I enclose you also a copy of our census, written in black ink, so far as we have *actual* returns, and supplied by *conjecture* in red ink, where we have no returns; but the conjectures are known to be very near the truth. Making

> very small allowance for omissions, which we know to have been very great, we are certainly above four millions, probably about four millions one hundred thousand.

8 *The Writings of Thomas Jefferson* 236 (Andrew A. Lipscomb ed., 1903) (emphasis added).

Washington expressed similar sentiments in a letter to Gouverneur Morris in which he lamented that the "enumeration" of the population appeared to fall short of the "estimate" he had previously offered of the population of the United States:

> In one of my letters to you the account which I gave of the number of inhabitants which would probably be found in the United States on enumeration was too large. The estimate was then founded on the ideas held out by the Gentlemen in Congress of the population of their several States, each of whom (as was very natural) looking thro' a magnifying glass would speak of the greatest extent, to which there was any probability of their numbers reaching. Returns of the Census have already been made from several of the States and a tolerably just estimate has been formed now in others, by which it appears that we shall hardly reach four millions; but one thing is certain our *real* numbers will exceed, greatly, the official returns of them.

31 *The Writings of George Washington* 329 (John C. Fitzpatrick ed., 1931) (emphasis added). This correspondence confirms, not only that Washington and Jefferson understood the distinction between an enumeration and an estimate, but also that they understood the Constitution and the first Census Act to have chosen the former over the latter.

In short, the phrase at the center of this constitutional debate—an "actual enumeration"—was a term of art used throughout the founding era to draw the very distinction at issue in this case. There can be no doubt that Americans in

the founding era understood the difference between an "actual enumeration" of the population and a mere "estimate," and, despite the obvious advantages of allowing estimates, nevertheless chose an "actual enumeration." If the original understanding of the Census Clause is to be preserved, imputation, which is unquestionably a method of estimation rather than enumeration, must be invalidated.[13]

B. The District Court's Attempts to Explain Away the Constitutional Language Are Unpersuasive.

The district court offered three principal grounds for its refusal to embrace this original understanding of the actual enumeration provision: (1) the Framers could not have intended to forbid methods like imputation that purportedly improve the accuracy of the census; (2) the actual enumeration provision may be disregarded because it was added to the Constitution by the Committee of Style; and (3) the Census Clause cannot be read to forbid imputation because some form of estimation is inevitable. All three arguments fail.

1. The district court's suggestion that the Census Clause proscribes only "the grossest of estimates," and does not prohibit "narrowly tailored statistical methodologies" (JS App. 26a) like imputation is as unworkable as it is unfaithful to the original meaning of the Census Clause. If the district court's approach were to prevail, it would embroil the federal

[13] At a minimum, even if this Court concludes that the Census Act is sufficiently unclear on this point to warrant consideration of Defendants' deference argument, the Court should "construe the statute to avoid" the "serious constitutional problems" raised by Defendants' interpretation of § 195. *See, e.g., Edward J. DeBartolo Corp. v. Florida Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 575 (1988). Indeed, it is well established that judicial deference is not accorded to an agency interpretation that runs headlong into a constitutional thicket. *Id.* at 574-75 (rejecting an agency interpretation under the doctrine of constitutional doubt, while noting that the interpretation in question "would normally be entitled to deference").

courts in an endless series of inquiries into which estimation procedures are *sufficiently* accurate to pass constitutional muster. See 525 U.S. at 349 (concurring opinion) (noting that "[t]he prospect of this Court's reviewing estimation techniques in the future, to determine which of them so obviously creates a distortion that it cannot be allowed, is not a happy one") (emphasis omitted).

Moreover, the district court's approach is flatly contradicted by the historical record. As explained above, the Framers understood an actual enumeration as a specific method of determining the population, not merely an aspiration for accuracy. Delegates to the Constitutional Convention expressly intended to adopt a "rule" that was "fixt" and "permanent and precise," and they understood the prescription of an actual enumeration to do just that. James Madison, for example, recognized that there was "difficulty" and "trouble" in conducting an actual enumeration, but nonetheless concluded that this was "the way required by the Constitution."

The historical record also contradicts the district court's suggestion that the Framers conceived only of "gross" estimates and had no conception of estimation as a supplement to actual enumeration. As noted above, records of early New Hampshire population counts refer to an assessment "partly by enumeration and partly by estimation," 3 Belknap, *supra* at 233-34, while participants in a contemporaneous British debate expressly discussed the difference between data drawn "from partial instances" and "an actual enumeration of the whole people." Eden, *supra* at 185.

Finally, the historical record belies the notion that the prescription of an actual enumeration was merely an aspiration for accuracy. The father of the British census expressly acknowledged the undercount problem—*i.e.*, that an "actual enumeration must always be under the real number." John Rickman, *The Commercial and Agricultural Magazine* 391, 397 (June 1800), *reprinted in* D.V. Glass, *Numbering the People* app. (1973). As explained above,

moreover, Washington and Jefferson recognized this same limitation. Although Washington had ample ability and the incentive to supplement the official returns with estimates, he acknowledged that he was bound by the "authenticated number" produced by the official census returns. Similarly, Jefferson acknowledged the possibility of making an "allowance" for the "omissions" in the enumeration, yet he understood that the Constitution called for census "returns" based on an actual enumeration, not mere "conjecture."

Thus, the Framers can hardly be thought to have embraced all methods of assessing the population that are purportedly aimed at "improving the accuracy of the decennial census." Indeed, their refusal to attempt to correct for the known shortcomings of enumeration is a powerful testament to their understanding of the Census Clause. See 525 U.S. at 335 (explaining that "[f]rom the very first census . . . Congress has prohibited the use of statistical sampling in calculating the population for purposes of apportionment"); *id.* at 348 (concurring opinion) (citing *Printz* v. *United States*, 521 U.S. 98, 105 (1997) for the proposition that Congress's refusal to use methods of estimation suggests that it "thought that estimations were not permissible").

2. The district court majority also thought the actual enumeration provision could be disregarded because it was "added [to the Constitution] by the Committee of Style and Arrangement, a committee which," according to the district court, "did not operate to alter the substance of any of the resolutions passed by the Constitutional Convention." JS App. 26a. This analysis is flatly inconsistent with this Court's opinion in *Nixon* v. *United States*, 506 U.S. 224 (1993). In that case, the petitioner argued that a particular term in the Impeachments Trial Clause lacked substantive meaning because it was a "'cosmetic edit' added by the Committee of Style after the delegates had approved the substance of the . . . Clause." *Id.* at 231. This Court rejected this argument for two reasons.

First, the Court explained that, because "the Committee of Style had no authority from the Convention to alter the meaning of" the Constitution, the Court "must presume that the Committee's reorganization or rephrasing accurately captured what the Framers meant in their unadorned language," and in short, "must presume that the Committee did its job." *Id.* (citing 2 Farrand, *supra* at 553, and *Powell* v. *McCormack*, 395 U.S. 486, 538-39 (1969)). As the Court went on to explain, "[t]his presumption is buttressed by the fact that the Constitutional Convention voted on, and accepted, the Committee of Style's linguistic version," and that language added by the Committee of Style is therefore "entitled to no less weight than any other word of the text, because the Committee revision perfected what had been agreed to." *Id.* (citing 2 Farrand, *supra* at 663-67) (internal quotations omitted).

Second, the Court noted that carrying this "argument to its logical conclusion would constrain us to say that the second to last draft would govern in every instance where the Committee of Style added an arguably substantive word." *Id.* at 231-32 (emphasis omitted). "Such a result," the Court continued, would be "at odds with the fact that the Convention passed the Committee's version, and with the well-established rule that the plain language of the enacted text is the best indicator of intent." *Id.* at 232.

The district court's analysis fails under this approach. The Committee of Style must be deemed to have done its job in calling for an "actual enumeration," and that language is "entitled to no less weight than any other word of the text." In fact, the proceedings of the Constitutional Convention suggest that the Committee had every reason to believe that the addition of the words "actual enumeration" was consistent with the Committee's job of capturing the Framers' intent—since the Framers' primary concern was to avoid a subjective standard for apportionment that would call for the exercise of discretion.

3. Finally, the majority was also wrong in asserting that, because the "imputation of a zero" would (in its view) be "inconsistent with the constitutional imperative of an actual enumeration," the constitution cannot be construed to foreclose "the imputation of statistically plausible values for the missing data." JS App. 25a. This conception of the actual enumeration provision cannot be embraced without rendering the provision a nullity. It boils down to the absurd proposition that the prescription of an actual enumeration is as offended by the *inclusion* of statistical estimates in the apportionment count as it is by the *exclusion* of those same estimates.

The plain language of the Census Clause calls for an actual enumeration, and in so doing it necessarily assumes that all persons who cannot be "enumerated" will be excluded from the apportionment. Thus, inclusion of statistical estimates runs afoul of the express constitutional command, while exclusion of persons who cannot be counted is a necessary corollary of a census by actual enumeration.

In other words, the failure to enumerate some persons does not mean that they are imputed out of existence. It simply means that they could not be enumerated and accordingly could not be included in the apportionment count.

In sum, there can be no serious doubt that the constitutional phrase "actual enumeration" excludes any statistical estimation techniques, whether random and pre-meditated (as in *House of Representatives*) or otherwise. None of the arguments advanced by the majority below provides any escape from this conclusion.

CONCLUSION

For the foregoing reasons, the Court should reverse the judgment of the district court.

Respectfully submitted,

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Joint Appendix Not Available For Filming at This Time